

Dean, School of Engineering

The School of Engineering develops innovative technologies, thinking, and practice, as well as creative leaders equipped to address the world's complex problems. By creating, developing, organizing, and managing complex technologies and products, engineers play a crucial role in contributing to the betterment of humanity and in shaping our world. As a profession that contributes to the most significant challenges of our day in the context of physical, economic, human, political, legal, and cultural realities, engineering is a tremendously exciting endeavor.

Through education, research, outreach, and service, MIT's School of Engineering develops future technological leaders, advances the frontiers of engineering knowledge, and imprints engineering practice. Building on an unparalleled tradition of achievement and a passion for excellence, the School is shepherding the next generation of engineering innovation.

Currently, the School's seven departments and two divisions encompass a community of some of the world's brightest minds and most inventive thinkers—about 38 percent of the Institute's faculty, more than 46 percent of MIT graduate students, and about 57 percent of MIT's undergraduate majors. Third-party ratings routinely rank the School of Engineering first in the nation, both at the undergraduate and at the graduate levels.

During the 2005–2006 academic year, the School continued efforts in several major initiatives that underscore its commitment to shaping engineering education and research. This report presents selected highlights of significant achievements. It also includes information on organizational updates, personnel changes, significant awards, and School statistics. Refer to the separate *Reports to the President* submitted by the School's departments, divisions, laboratories, centers, and programs for additional information about their activities over the past year.

Key Initiatives

The School strives to make significant contributions to addressing the societal challenges of the 21st century by pursuing a course of leadership through technical excellence and innovation. It continues to give special emphasis to the seven programmatic themes identified five years ago:

- Bioengineering
- Information engineering (information, computation, and communication)
- Engineering systems
- Tiny technologies (miniaturization, microtechnologies, and nanotechnologies)
- Emerging technologies
- Educational innovation
- Diversity

Energy Research Council

One topic that cuts across these strategic initiatives—the School’s efforts in energy—bears mentioning. After the May 2005 announcement by President Susan Hockfield establishing MIT’s energy initiative, the School took on a significant role in this major multidisciplinary effort. Professor Robert Armstrong, department head of Chemical Engineering, and Professor Ernest Moniz of Physics and Engineering Systems have served as cochairs of the Energy Research Council established by President Hockfield and then-provost Robert Brown. The council developed and presented to the MIT community a report in May 2006 outlining recommendations for an Institute-wide response to the global energy crisis. The council included members from all five of MIT’s schools, with the following School of Engineering participants: Professor Angela Belcher of Biological Engineering and Materials Science and Engineering, Professor Vladimir Bulovic of Electrical Engineering and Computer Science (EECS), Professor Gerbrand Ceder of Materials Science and Engineering, associate professor William Green of Chemical Engineering, Professor John Heywood of Mechanical Engineering, Professor Mujid Kazimi of Nuclear Science and Engineering, Professor Steven Leeb of EECS, and assistant professor Yang Shao-Horn of Mechanical Engineering.

Entrepreneurship

Entrepreneurship pervades much of what the School does. In the spring, the School produced a report summarizing entrepreneurship activities at the Institute. Printed in limited quantity for internal distribution only, the brief survey provides a glimpse into the breadth of the activities from Institute-run to student-led programs. Ranging the educational spectrum from high school outreach to postgraduate programs in both the School of Engineering and the MIT Sloan School of Management, the report details each group’s mission, activities, organizational affiliation, and contact information.

Educational Innovation and Diversity

As a leader in engineering education, the School has continually invested in cross-cutting innovations and emerging technology educational initiatives. The following section begins by summarizing participation in national discussions on important issues of math, science, and engineering education, and continues by highlighting additional efforts undertaken in educational innovation and diversity through new degree offerings and a range of directed activities and programs, including those through our Engineering Outreach Programs, Undergraduate Practice Opportunities Program, Office of Educational Innovation and Assessment, the Engineering Council for Undergraduate Education, and Professional Education Programs.

Participation in National Discussions on Education Issues

In October, the Engineering Systems Division hosted a one-day workshop that brought together a number of national leaders to discuss the subject of engineering education. President Bush’s science advisor, the head of the National Science Foundation, and other top scientists and engineers from around the country gathered to push forward a national conversation on engineering education in the 21st century and the challenges, both here and abroad, that will affect it.

Speaking before a public meeting of the US Secretary of Education's Commission on the Future of Higher Education, <http://www.ed.gov/about/bdscomm/list/hiedfuture/index.html>, in February, the dean issued a call for a new way of thinking about American higher education. He presented evidence of the impact of OpenCourseWare (OCW) on educators and learners around the world, stressed the benefits that users in the United States derive from MIT's unique experiment in open sharing, and addressed potential cost savings through wider adoption of the OCW model.

New Degree Programs, Reviews, and Alliance Extension

During AY2005–2006, the School launched four new degree programs and underwent reviews of two master's degree programs. The Singapore–MIT Alliance (SMA) continued into a second phase. (Refer to the separate reports submitted by the departments and SMA, as well as to their websites, for additional information about these programs.)

SM in Computation for Design and Optimization

In fall 2005, the School introduced a new SM graduate program in computation for design and optimization, <http://web.mit.edu/cdo-program/>. This degree program began its first year with 17 students: 5 students on the MIT campus and 12 based in Singapore as part of SMA. The interdepartmental program draws faculty from all departments in the School as well as from the Department of Mathematics, <http://www-math.mit.edu/>, and the MIT Sloan School of Management, <http://mitsloan.mit.edu/>. It is intended to prepare engineers in computational methods and applications in the design and operation of complex engineered systems.

MEng in Manufacturing

At MIT, we have had a vibrant dual-degree master's program in manufacturing (the Leaders for Manufacturing program) and manufacturing programs at the PhD level, but no professional master's program exclusively in engineering. In November 2004, the MIT faculty voted to create a master of engineering degree in the Department of Mechanical Engineering, <http://meche.mit.edu/>. The 12-month program, launched in the fall, covers manufacturing physics, manufacturing systems, product design, and elements of business. By adding this new program to an array of manufacturing activities in the School, we are further strengthening one of our historical areas of excellence. This program is offered in conjunction with SMA.

SB in Mechanical and Ocean Engineering

Shortly after the Departments of Mechanical Engineering, <http://www-me.mit.edu/>, and Ocean Engineering, <http://oe.mit.edu/>, merged early last year, the faculty of both disciplines unanimously approved the creation of a new SB program. Meeting important goals of the merged department, the new SB preserves the ocean engineering identity at MIT while building on the strength of the Mechanical Engineering Department, thus aiming to increase the number of students drawn to this course of studies. Designed for students interested in mechanical engineering with specialization in ocean engineering, this program includes a basic grounding in mechanical engineering, plus engineering aspects of ocean sciences, ocean exploration, and utilization of the oceans for transportation, defense, and energy and mineral resources.

SB in Biological Engineering, Course Number

Last year, the MIT faculty voted to create a program leading to an SB in biological engineering, the first entirely new curriculum established at the Institute in 29 years. Begun this spring, the program combines a science foundation in genetics, biochemistry, molecular biology, and cell biology with quantitative, integrative-systems design-oriented engineering principles and approaches. In February, the faculty also officially approved Course 20 Biological Engineering, the first course to be named in more than 30 years.

Review of MEng in Civil and Environmental Engineering

Begun in 1994 to meet a need expressed by industry for the preparation of students interested in practice, the Department of Civil and Environmental Engineering developed an intensive, nine-month master of engineering program. Following a several-year process, a review of the program was completed, and in December the committee presented its report to the faculty. While endorsing the program and its continuation, the committee made several recommendations for improvements, some relating to the administration and admissions process of the program, others relating to the academic content.

Review of MLog in the Engineering Systems Division

The MEng in logistics is a nine-month, cross-school program (Engineering and Sloan) housed in the School's Engineering Systems Division. The MLog program requires industrial experience and emphasizes problem solving and leadership, with a global perspective. The program is responding to a growing industry need and received a very positive review.

Continuation of the Singapore-MIT Alliance

SMA, in its second phase, continues to be an important program for the School. After the signing in March 2003 of a memorandum of understanding between MIT, National University of Singapore (NUS), and Nanyang Technological University (NTU) to enter into a second phase, the parties worked to select proposals and define plans for "SMA-2." Four combined educational and research programs started in July 2005 and a fifth will start in July 2006. SMA-2 allows students to obtain a dual (not joint) degree—a master's degree from MIT and a master's degree from either NTU or NUS, or a PhD from either NTU or NUS. SMA-2 offers graduate degrees in four engineering disciplines and one life science discipline.

Engineering Outreach Programs

The School of Engineering offers several outreach programs: the Minority Introduction to Engineering and Science (MITES), the Saturday Engineering Enrichment and Discovery (SEED) Academy, and the Science Technology Engineering and Math (STEM) program.

In February, alumnus Dedric A. Carter, PhD, was appointed executive director for the newly renamed Office of Engineering Outreach Programs (previously know as

Engineering Special Programs). Dr. Carter assumed this appointment effective April 1 with the mission of providing outreach and opportunity programs in K–12 for promising students from underrepresented and targeted communities.

Minority Introduction to Engineering and Science Program

This year, the MITES program selected 62 high school seniors to participate in its rigorous six-week summer session in 2006. The selected students come from 24 states and Puerto Rico. MITES 2006 participants will take classes in calculus (1 or 2); physics (1, 2, or 3); chemistry, biology, or biochemistry; a writing-intensive humanities course; and a project-based course (genomics at the Broad Institute, internet programming, or engineering design). The program receives significant support from several sources: corporations, foundations, MIT alumni, and parents of former participants have made major contributions to the 2006 session. Of the 69 high school students who attended MITES in 2005, 36 (52 percent) will attend MIT this year. Now in the 31st year, the MITES program has provided nearly 1,600 students with the opportunity to study engineering and science at MIT.

Saturday Engineering Enrichment and Discovery Academy

The Saturday Engineering Enrichment and Discovery (SEED) Academy, an academic enrichment and technical career exploration program for Boston, Cambridge, and Lawrence public high school students, completed its fourth year of programming in 2005–2006. The seven-semester program is designed to strengthen participants' fundamental mathematics, science, and communication skills using an original, hands-on curriculum. To date, the program has served 115 students. In spring 2006, the program graduated its second class of students with a 100 percent college admission rate. SEED Academy will enter its fifth year of operation in AY2006–2007.

Science Technology Engineering and Math Program

Now in its third year, the Science Technology Engineering and Math (STEM) Program is a nonresidential, year-round academic enrichment and mentoring program for local public school students entering grades 6 through 9. The STEM Program currently serves 62 Boston and Cambridge middle school students. STEM consists of three components: (1) a five-week summer academic phase at MIT that aims to develop mathematical thinking and problem-solving abilities in preparation for high school “gateway” math and science courses; (2) an academic year mentoring program, in which each STEM Program student is paired with an MIT student in a monthly series of structured and unstructured social and academic exchanges; and (3) parent workshops designed to empower parents to advocate for and equip their children for school success. During the 2005–2006 academic year, STEM students participated in a mentoring program with MIT students and participated in workshops on cryptography, game theory, designing environmentally safe automobile engines, and more. This summer, STEM students will take various challenging academic courses such as descriptive geometry, topology, chemistry, physics, vector mechanics, and probability and statistics. The STEM Program is collaborating with the Center for the Advancement of Hispanics in Science and Engineering Education based in Washington, DC, and is funded by grants from the Lord Foundation, the Hayden Foundation, and the Boston Bruins Foundation.

Undergraduate Practice Opportunities Program

The School created the Undergraduate Practice Opportunities Program (UPOP) to better prepare MIT's engineering sophomores for the multifaceted nature of engineering practice. The program consists of two major phases: the Independent Activities Period (IAP) Engineering Practice Workshop and the Summer Practice Experience. With assistance from engineering professionals, faculty from the School of Engineering and the Sloan School of Management delivered instruction for the IAP Engineering Practice Workshop on topics including robust engineering design, system dynamics, leadership, and communication. UPOP initiated its fifth year by increasing program enrollment to 237 students, drawn from all seven engineering departments. Even with the program's rapid growth, the 2006 recruiting effort resulted in 93 percent of UPOP students receiving one or more internship offers, and 87 percent will engage in internships as part of the Summer Practice Experience. Of UPOP's summer employers, 97 percent said they would like to rehire their UPOP intern. Throughout the spring term, UPOP also sponsored several career development workshops that involved the participation of many MIT alumni.

Educational Innovation Assessment

The Office of Education Innovation and Assessment (EIA) and the Engineering Council for Undergraduate Education support and initiate education innovation and assessment activities within the School and its units, working closely also with the Dean for Undergraduate Education's Teaching and Learning Lab (TLL). The activities include developing and implementing tailored program assessment tools, sharing and disseminating best practices in program and subject assessment, implementing a School-based engineering senior survey every other year, and preparing for reviews by the Accreditation Board for Engineering and Technology. Other major functions and accomplishments during the past year include the following:

- Developing new research projects that focus on three key School-wide themes: (i) integration of undergraduate engineering study of differential equations, (ii) incorporation of engineering ethics issues in undergraduate education, and (iii) development of core education content on engineering methods.
- Maintaining a website that contains tailored program and subject assessment tools developed by EIA, as well as best-practice tools from other schools. To promote continuous program improvement, the website also provides a database of student and alumni survey data over many years.
- Working with TLL, EIA developed a proposal for School of Engineering teaching assistant training to support the School's units.
- Advising, supporting, and evaluating engineering faculty education projects funded through the School of Engineering Curriculum Innovation Grant and the d'Arbello Fund, including design and implementation of project education assessments. A major emphasis of the past year was on developing foundational engineering and projects-based learning curriculum for the new general Institute requirements.

Professional Education Programs

This summer, the Professional Education Programs office will be making preparations to begin the Mid-Career Acceleration Program in fall 2006, to help MIT alumni and other accomplished professionals relaunch their scientific or technical careers. Refer to the separate report submitted by the Professional Education Programs office for additional information about its activities in support of educational innovation during AY2005–2006.

Notable Event

Among the School's many notable events is what was formerly known as the \$50K Entrepreneurship Competition, now renamed the "\$100K" this year. In its 17th year, the competition this year chose for its two grand prizes an infection-reducing coating technology and affordable housing for transient job seekers in developing countries. The coating technology, SteriCoat, won in the competition's original Business Venture category; CentroMigrante won the new Development Prize.

Personnel

Having served as MIT's provost since 1998, Robert A. Brown, the Warren K. Lewis professor of chemical engineering, stepped down from that position to become president of Boston University in September.

The School named Dr. Dedric Carter ('99) executive director of Engineering Outreach Programs (formerly Engineering Special Programs) beginning April 1.

Effective September 1, Anantha Chandrakasan, the Joseph F. and Nancy P. Keithley professor of electrical engineering, became the director of the Microsystems Technology Laboratories. He succeeded Professor Martin A. Schmidt of EECS, who had served in the position for seven years.

In October, Professor Srinu Devadas was named associate department head (Computer Science) of EECS.

Beginning in October, W. Eric L. Grimson, the Bernard Gordon professor of medical engineering and associate department head (Computer Science) of EECS, became the new head of that department, having served as acting department head since July.

Daniel E. Hastings, professor of aeronautics and astronautics and engineering systems, stepped down from serving as director of the Engineering Systems Division (ESD) to become MIT's dean of undergraduate education in January. At that time, Institute Professor Joel Moses of EECS became acting director of ESD.

At the end of June 2006, the School of Engineering professor of teaching innovation, Anthony Patera of Mechanical Engineering, stepped down from his position as codirector of SMA.

In October, Karl Reid ('84) left the School's position of executive director of Engineering Special Programs to become assistant to the chancellor and associate dean for undergraduate education, with the title Director of the Office of Minority Education.

Having served as department head of EECS since September 2004 and more than five years as its associate head (Electrical Engineering), L. Rafael Reif, the Fairborz Maseeh professor of emerging technology, became MIT provost as of August 1.

In May, Leon Sandler was named executive director of the Deshpande Center for Technological Innovation, succeeding Krisztina Holly ('89), who left MIT for another opportunity.

In January, Edwin L. Thomas, the Morris Cohen professor of materials science and engineering, stepped down as founding director of the Institute for Soldier Nanotechnology to become head of the Department of Materials Science and Engineering. He succeeded Subra Suresh, Ford professor of materials science and engineering, who left the position in September.

Awards

Each year, faculty members in the School of Engineering receive numerous honors in recognition of their research and service, many offered by professional societies and the faculties' professional communities. This year was no exception. The reports of the School's departments, divisions, laboratories, centers, and programs make note of many of these awards. Several especially notable awards and School-based awards deserve additional mention here.

The National Academy of Engineering elected to membership two MIT engineering professors: Dimitri A. Antoniadis, the Ray and Maria Stata professor of electrical engineering, for "contributions on microelectronics in field-effect devices and for silicon process modeling;" and M. Frans Kaashoek, professor of electrical engineering and computer science, for "contributions to computer systems, distributed systems, and content-distribution networks."

James G. Fujimoto, a professor in EECS, is one of three MIT professors elected this year to the National Academy of Sciences. Along with 72 other new members, Professor Fujimoto was cited for his distinguished and continuing achievements in original research.

MIT Institute Professor Robert Langer was presented the 2005 Von Hippel Award, the highest honor of the Materials Research Society, for "pioneering accomplishments in the science and applications of biomaterials in drug delivery and tissue engineering, particularly in inventing the use of materials for protein and DNA delivery." He was also named to the National Inventors Hall of Fame for his work developing sustained-release drug delivery systems and was among the winners of the World Technology Awards, which honor "the most innovative people and organizations in the science and technology world in 2005."

MIT professor emeritus Eugene E. Covert of the Department of Aeronautics and Astronautics received one of the most prestigious awards in aviation: the Daniel Guggenheim Medal. The prize, established in 1929, was first awarded to aviation pioneer Orville Wright; it recognizes individuals who make profound contributions to advancing aeronautics.

Peter Szolovits, professor of electrical engineering and computer science, is one of two MIT faculty to be elected in 2005 to the Institute of Medicine. Members are selected for their major contributions to health and medicine or related fields.

Two of the six MIT professors named fellows of the American Association for the Advancement of Science (AAAS) hold appointments in the School of Engineering: Rafael L. Bras, the Edward Abdun-Nur professor of civil and environmental engineering, and Gregory N. Stephanopoulos, the Bayer professor of chemical engineering. AAAS fellows are recognized for helping to advance science applications that are deemed scientifically or socially distinguished.

Professor of electrical engineering emeritus John M. Wozencraft received the Institute of Electrical and Electronics Engineers (IEEE) Alexander Graham Bell Medal. The medal is one of the most prestigious awards given by the IEEE and recognizes Wozencraft for his pioneering work in the development of sequential decoding and the signal space approach to digital communication.

Three engineering faculty members were among the TR35, *Technology Review's* compilation of the 35 best innovators worldwide under age 35: Professor Regina Barzilay and Samuel Madden, ITT Career Development professor, both of Electrical Engineering and Computer Science, and Francesco Stellacci, Finmeccanica professor of materials science and engineering.

The American Institute of Aeronautics and Astronautics (AIAA) has named Professor Ian Waitz of Aeronautics and Astronautics an AIAA fellow. The distinction is presented by the AIAA and its board to members who have made "notable and valuable contributions to the arts, sciences or technology thereof in Aeronautics and Astronautics."

Jesus del Alamo, a professor in the Department of Electrical Engineering and Computer Science, was named a fellow of the Institute of Electrical and Electronics Engineers (IEEE) for his "extraordinary record of accomplishments in any of the IEEE fields of interest."

J. Kim Vandiver, dean for undergraduate research, professor of mechanical and ocean engineering, and founder of the Edgerton Center, was named a Distinguished Eagle Scout by the Boston Minuteman Council of the Boy Scouts of America. The honor goes to Eagle Scouts who have had outstanding careers after earning the Eagle Scout, the highest rank in Boy Scouting.

A panel of international judges selected Subra Suresh, the Ford professor of engineering and head of the Department of Materials Science and Engineering, as the 2006 recipient of one of the most prestigious and multinationally coordinated prizes in materials science and engineering: the Acta Materialia Gold Medal.

Institute and School Awards

David R. Wallace, professor of mechanical engineering, received the Amar Bose Award for Excellence in Teaching. The award, established in 1989 by the School to recognize outstanding contributions to undergraduate education, is given annually to an School of Engineering faculty member whose teaching contributions over an extended period are characterized by dedication, care, creativity, and inspiration to students and colleagues.

Doherty professor in ocean utilization Anette “Peko” Hosoi of Mechanical Engineering and Daniel Frey, the Robert N. Noyce career development professor of mechanical engineering and engineering systems, received the Junior Bose Award. The award, established in 1996, recognizes teaching excellence by junior engineering faculty.

Robert E. Cohen, the Raymond A. and Helen E. St. Laurent professor of chemical engineering, was selected as the first recipient of the Capers (1976) and Marion McDonald Award for Excellence in Mentoring and Advising. The award is presented to a faculty member in the School of Engineering, who, through tireless efforts to engage minds, elevate spirits, and stimulate high-quality work, has advanced the professional and personal development of students and colleagues.

Graduate Student Council Graduate Teaching Awards for excellence in teaching a graduate-level course, given each year to one professor and/or teaching assistant from each school, were awarded this year to graduate students Kristin J. Mattern and Jennifer Davis of Chemical Engineering and Diogo Santos of Materials Science and Engineering, as well as Ford professor of engineering Patrick H. Winston of Electrical Engineering and Computer Science.

Mechanical engineering Professor John Brisson, KDD associate professor of communications and technology Vladimir Bulovic in Electrical Engineering and Computer Science, and Jacopo Buongiorno, Norman C. Rasmussen career development professor of nuclear science and engineering, were awarded Ruth and Joel Spira Awards for Distinguished Teaching. These awards are made possible by a gift from Ruth and Joel S. Spira to acknowledge “the tradition of high-quality engineering education at MIT.” Awards are made each year to one faculty member in each of the three departments.

One of two Everett Moore Baker Memorial Awards for Excellence in Undergraduate Teaching went to Professor David R. Wallace of Mechanical Engineering.

Professor Olivier de Weck of Aeronautics and Astronautics and Engineering Systems received the Frank E. Perkins Award for a professor who has served as an excellent advisor and mentor for graduate students.

Professor Dennis Freeman of Electrical Engineering and Computer Science was one of three 2006 MacVicar Fellows. The awards, given in memory of former dean of undergraduate education and professor of physics Margaret L. A. MacVicar, recognize faculty members’ excellence in teaching and innovation in education.

Awards Received by Engineering Students

Carl Dietrich, a doctoral candidate in the Department of Aeronautics and Astronautics, received the \$30,000 Lemelson–MIT Student Prize for a portfolio of novel inventions, including a new Personal Air Vehicle, a desktop-sized fusion reactor, and a lower-cost rocket engine.

Mechanical Engineering graduate student Chulmin Joo is the first recipient of the Hatsopoulos \$50,000 Innovation and Thesis Award. Named for George Hatsopoulos, an MIT alumnus and entrepreneur, the prize is designed to recognize original research that leads to a patentable invention or innovation. Joo won for his original research that improves the method by which clinicians can view cells and molecules both clearly and accurately.

Two MIT graduate students from Civil and Environmental Engineering have won a 2006 World Bank Development Marketplace grant to develop a solar microgenerator that would provide affordable energy to the African country of Lesotho. Matthew Orosz and Amy Mueller received just over \$100,000 for their project, one of 30 the World Bank funded this year in the competitive Development Marketplace grant program.

Matthew Zedler, a junior in Mechanical Engineering who uses his technical expertise to assist humanitarian efforts, was among the 75 students to be named a 2006 Harry S. Truman Scholar. The Truman Scholarships were established in 1977 to honor students “who are likely to make a difference.”

Vivek Venkatachalam, a senior in Physics and Electrical Engineering and Computer Science, received a 2006 Gates Cambridge Scholarship. Founded in 2001, the Gates Cambridge Scholarships have joined three older foundations—the Rhodes, Marshall, and Churchill Scholarships—in providing intensely competitive opportunities for the most talented US students to pursue postgraduate study in the English-speaking countries of Europe.

Anna Bershteyn, a native of Ukraine and graduate student in Materials Science and Engineering, was awarded a 2006 Paul and Daisy Soros Fellowship. The charitable trust founded by the Soroses was established to support graduate studies for immigrants and children of immigrants.

Six juniors and six sophomores from the School of Engineering were selected as Burchard Scholars in the School of Humanities, Arts, and Social Sciences (SHASS). The awards, named after the first SHASS dean, John Ely Burchard, are given to students who demonstrate unusual abilities and academic excellence in SHASS areas. The six juniors are Dhruvatej Boddupalli (Chemical Engineering), Waseem S. Daher (Electrical Engineering and Computer Science), Jacqueline J. Greene (Materials Science and Engineering), Daphne Hao (Chemical Engineering), Silpa Kaza (Mechanical Engineering), and Taylor Roan (Mechanical Engineering). The six sophomores are Jean Chang (Mechanical Engineering), Irene Fan (Electrical Engineering and Computer Science), Michael S. Fleder (Electrical Engineering and Computer Science), Erqi Liu (Chemical Engineering and Economics), Sean C. Morton (Materials Science and Engineering), and Ellen E. Sojka (Chemical Engineering).

Eva Enns of Electrical Engineering and Computer Science received the Henry Ford II Scholar Award, given to a senior in the School of Engineering who has attained the highest academic record at the end of the third year and who exhibits exceptional potential for leadership in the profession of engineering and in society.

Yao-Chung King, a senior in Materials Science and Engineering, received a Karl Taylor Compton Prize for achievement in citizenship and devotion to the welfare of MIT.

The Frederick Gardiner Fassett Jr. Award is given to InterFraternity Council members who have demonstrated the qualities of spirit, dedication, and service in furthering the ideals of MIT fraternity brotherhood and sisterhood. This year, Tim Pennington, a senior studying ocean engineering, received one of the awards.

Alexander Bagley, a junior in Chemical Engineering, and Jennifer Choy, a junior in Nuclear Science and Engineering, received two of three Barry Goldwater Scholarships given to MIT students this year. The award honors students who exhibit outstanding potential and intend to pursue careers in mathematics, the natural sciences, or those engineering disciplines that contribute significantly to the technological advances of the United States.

Stephen Hou, a graduate student in Electrical Engineering and Computer Science, was awarded the Goodwin Medal, a prize given to a graduate student whose teaching is "conspicuously effective over and above ordinary excellence."

The Albert G. Hill Prize is awarded to minority juniors or seniors who have maintained high academic standards and made continued contributions to the improvement of the quality of life for minorities at MIT. Andrew Clare, a junior in Aeronautics and Astronautics, received one of this year's prizes. A former vice president for research, Dr. Hill was an early champion of equal opportunity at MIT.

The Ronald E. McNair Scholarship Award recognizes black undergraduates who have demonstrated strong academic performance and who have made considerable contributions to the minority community. The award was created by the Black Alumni/ae of MIT in honor of Dr. Ronald McNair (PhD 1977), who died in the explosion of the space shuttle Challenger. The awards this year went to Nii Armar, a senior in Aeronautics and Astronautics, Yamicia Connor, a junior in Chemical Engineering, and Etienne Toussaint, a junior in Mechanical Engineering.

Athletics awards went to several engineering students this year. Benjamin Kendall, a senior in Aeronautics and Astronautics, won the Harold J. Pettegrove Award for outstanding service to intramurals. Deanna Lentz, a senior in Mechanical Engineering, received the MIT Woman Athlete of the Year Award. Michael D'Auria, a senior in Materials Science and Engineering, received the Howard W. Johnson Award for the male senior athlete of the year. Uzoma Orji, a senior in Electrical Engineering and Computer Science, received the Malcolm G. Kispert Award for female senior scholar-athlete of the year.

One of the John S. W. Kellett '47 Awards for a commitment to creating a more welcoming environment at MIT, including but not limited to improving the experience of lesbian, bisexual, gay, transgendered, and questioning individuals, went to Christina Chestnut, a senior in Mechanical Engineering.

The Laya Wiesner Community Award is given to a member or friend of the MIT community for conspicuously effective service that reflects Mrs. Wiesner's concerns for enhancing life at the Institute and the world. This year, Raja H. R. Bobbili, a junior in Electrical Engineering and Computer Science, won the award.

The Laya W. Wiesner Award for an undergraduate woman who has most enhanced MIT community life went to Nupur Garg, a junior in Chemical Engineering.

Archana Venkatraman, a senior in Electrical Engineering and Computer Science, received one of the Association of MIT Alumnae Senior Academic Awards for senior women who have demonstrated academic excellence through coursework and related activities at MIT.

Three engineering graduate students received William L. Stewart Jr. Awards, which recognize contributions by an individual student or student organization to extracurricular activities and events during the preceding year: Sylvain Bruni of Aeronautics and Astronautics, Barun Singh of Electrical Engineering and Computer Science, and Nici Ames of Mechanical Engineering. The awards are given in memory of William L. Stewart Jr., an alumnus and member of the MIT Corporation who showed deep interest in student life at MIT.

Three engineering students won this year's Priscilla King Gray Award for Public Service: Christina Gomez, a junior in Mechanical Engineering; Marta Luczynska, a senior in Electrical Engineering and Computer Science; and Alia Whitney-Johnson, a sophomore in Civil and Environmental Engineering. The award is given to an undergraduate exceptionally committed to public service at MIT and its surrounding communities.

Awards to Engineering Staff

Assistant dean of engineering Sheila Kanode received an MIT Excellence Award in the category of "Serving the Client: providing consistent and exceptional service."

Nicole Stark, director of the School of Engineering's SEED Academy, was named MIT's 2006 YMCA Black Achiever. The YMCA Black Achievers Award is a long-standing program sponsored by the YMCA of greater Boston designed to recognize black professionals who have achieved professional success and connect successful black professionals with YMCA youth development programs.

This year, the School continued the Rewards and Recognition program it launched in 2001 to recognize the achievements of the School's dedicated staff. In April, the School presented 13 Infinite Mile Awards at its sixth annual School-wide celebration of excellence. Awards for Excellence went to Deborah Alibrandi (Mechanical Engineering), Lauren Clark (School of Engineering Development and Communication Office), John

Desforge (SMA), Tara Eisner (Lean Aerospace Initiative), Aza Gevorkian (Administrative Services Organization), Kathleen Reposa (Biological Engineering), and Gwen Wilcox (Chemical Engineering). Awards for Sustained Excellence went to Susan Cass (Center for Technology, Policy, and Industrial Development), Gerald Hughes (Materials Science and Engineering), and Angela Mickunas (Mechanical Engineering). Awards for Team Excellence went to Michelle Berry, Daniel Darling, Catherine Greene, Aran Parillo, and Darlene Ray of the Biotechnology Process Engineering Center; Samuel Crooks and Vicky Diadiuk of the Microsystems Technology Laboratories; and Joseph Cronin, Robert Gertsen, Stephen Haberek, and Robert Nuttall of the Pappalardo Laboratories.

Statistics for 2005–2006

Undergraduate Enrollment 2005–2006

- 1,745 students
- 36 percent women
- 21 percent underrepresented minorities

Graduate Enrollment 2005–2006

- 2,842 students
- 658 women
- 136 underrepresented minorities

Degrees Awarded 2006

- 578 bachelor's degrees
- 735 master's and MEng degrees
- 298 PhD, ScD, and professional engineering degrees

Faculty 2005–06

- 252 professors
- 59 associate professors
- 61 assistant professors

Thomas L. Magnanti
Dean
Institute Professor

More information about the School of Engineering can be found at <http://mit.edu/engineering/>.